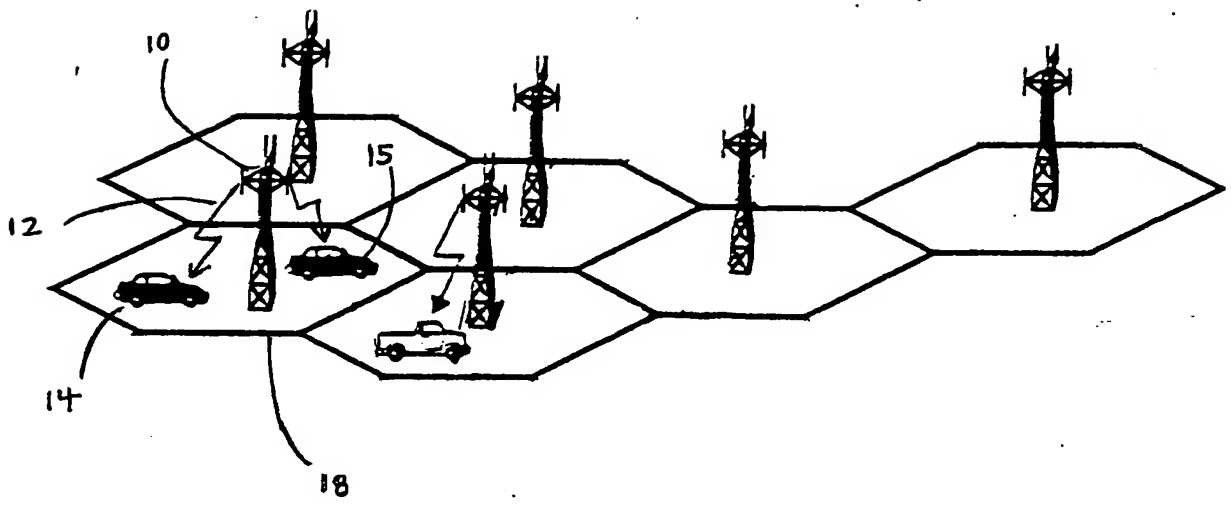



Figure 1

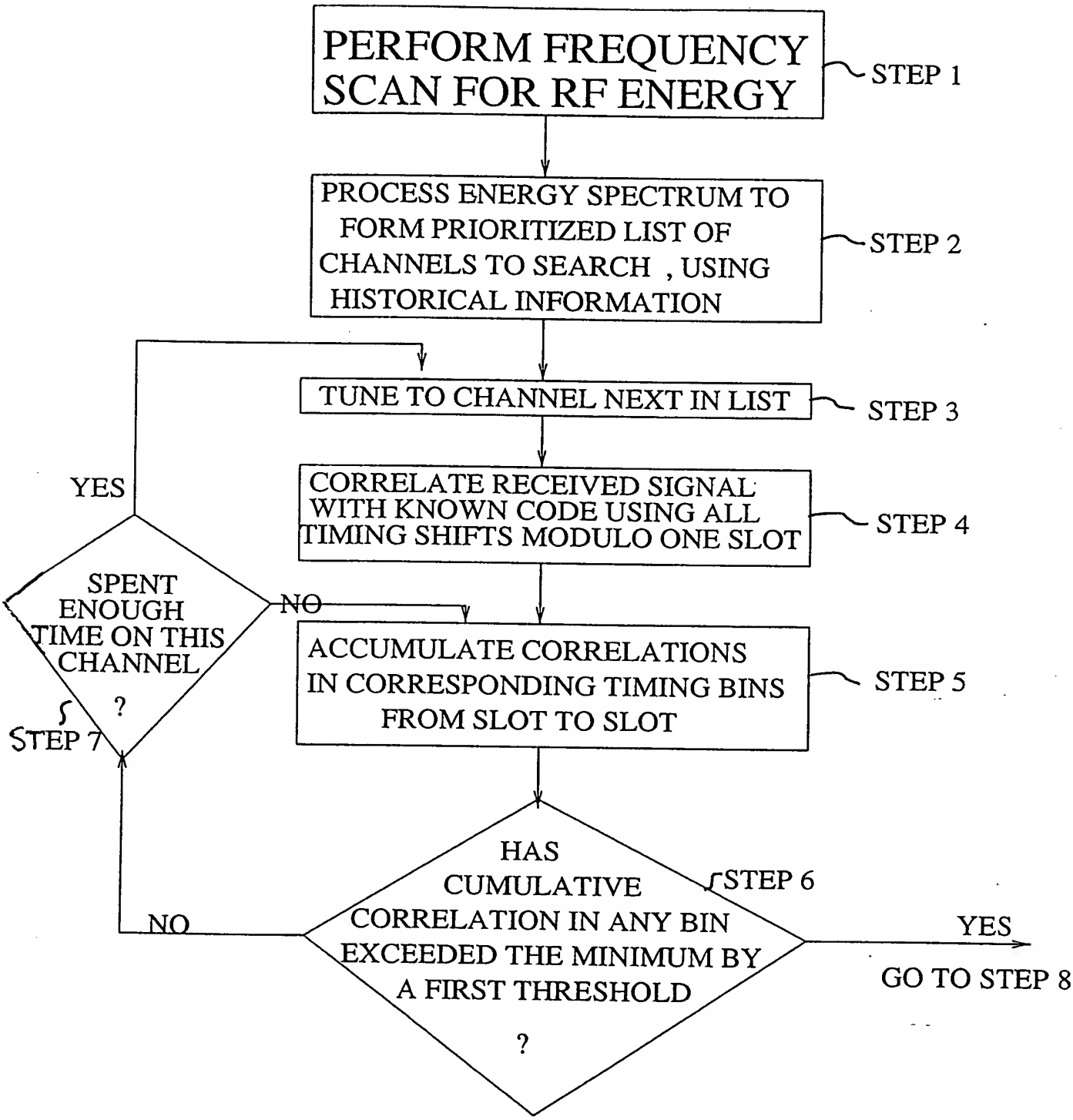

PERFORM FREQUENCY SCAN FOR RF ENERGY
STEP 1
PROCESS ENERGY SPECTRUM TO FORM PRIORITIZED LIST OF CHANNELS TO SEARCH , USING HISTORICAL INFORMATION
STEP 2
TUNE TO CHANNEL NEXT IN LIST
STEP 3
CORRELATE RECEIVED SIGNAL WITH KNOWN CODE USING ALL TIMING SHIFTS MODULO ONE SLOT
STEP 4
YES
SPENT ENOUGH TIME ON THIS CHANNEL ?
STEP 7
NO
ACCUMULATE CORRELATIONS IN CORRESPONDING TIMING BINS FROM SLOT TO SLOT
STEP 5
HAS CUMULATIVE CORRELATION IN ANY BIN EXCEEDED THE MINIMUM BY A FIRST THRESHOLD ?
STEP 6
NO
YES
GO TO STEP 8

Figure 2(a)

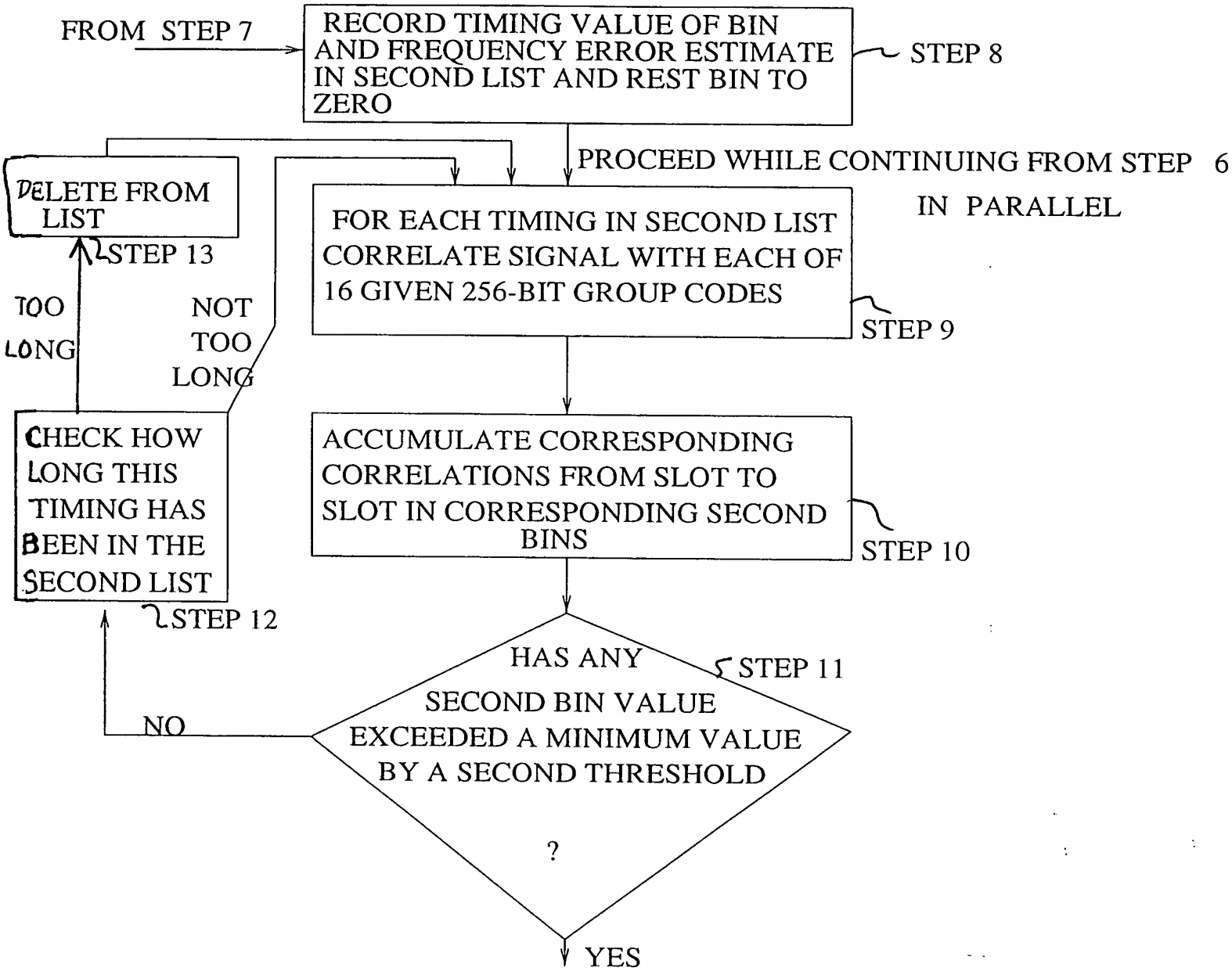

FROM STEP 7
RECORD TIMING VALUE OF BIN AND FREQUENCY ERROR ESTIMATE IN SECOND LIST AND REST BIN TO ZERO
STEP 8
PROCEED WHILE CONTINUING FROM STEP 6 IN PARALLEL
DELETE FROM LIST
STEP 13
FOR EACH TIMING IN SECOND LIST CORRELATE SIGNAL WITH EACH OF 16 GIVEN 256-BIT GROUP CODES
STEP 9
TOO LONG
NOT TOO LONG
CHECK HOW LONG THIS TIMING HAS BEEN IN THE SECOND LIST
STEP 12
ACCUMULATE CORRESPONDING CORRELATIONS FROM SLOT TO SLOT IN CORRESPONDING SECOND BINS
STEP 10
HAS ANY SECOND BIN VALUE EXCEEDED A MINIMUM VALUE BY A SECOND THRESHOLD ?
STEP 11
NO
YES
Go To STEP 14

Figure 2(b)

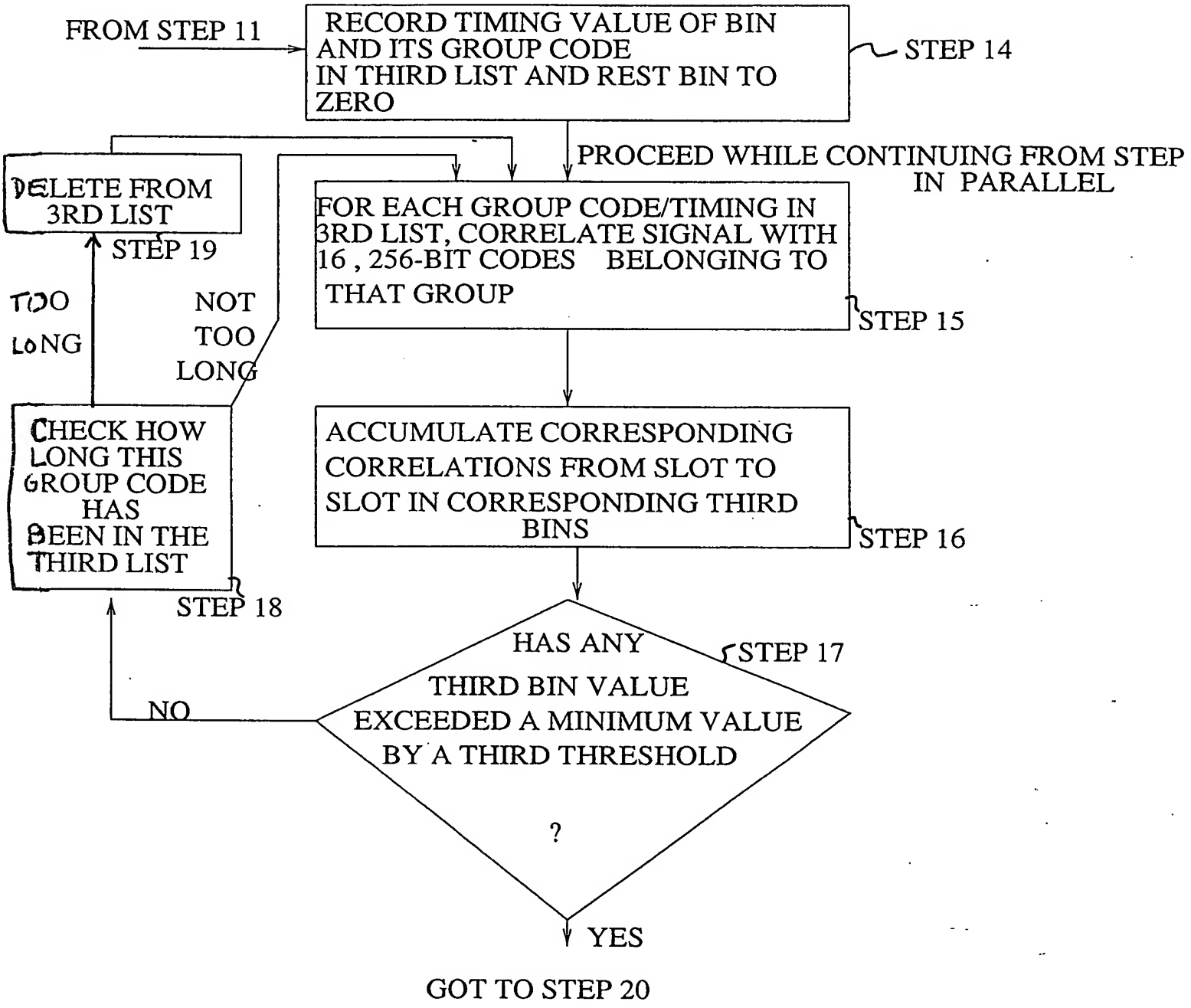

FROM STEP 11
RECORD TIMING VALUE OF BIN AND ITS GROUP CODE IN THIRD LIST AND REST BIN TO ZERO
STEP 14
PROCEED WHILE CONTINUING FROM STEP IN PARALLEL
DELETE FROM 3RD LIST
STEP 19
FOR EACH GROUP CODE/TIMING IN 3RD LIST, CORRELATE SIGNAL WITH 16 , 256-BIT CODES BELONGING TO THAT GROUP
STEP 15
TOO LONG
NOT TOO LONG
CHECK HOW LONG THIS GROUP CODE HAS BEEN IN THE THIRD LIST
STEP 18
ACCUMULATE CORRESPONDING CORRELATIONS FROM SLOT TO SLOT IN CORRESPONDING THIRD BINS
STEP 16
HAS ANY THIRD BIN VALUE EXCEEDED A MINIMUM VALUE BY A THIRD THRESHOLD ?
STEP 17
NO
YES
GOT TO STEP 20

Figure 2(c)

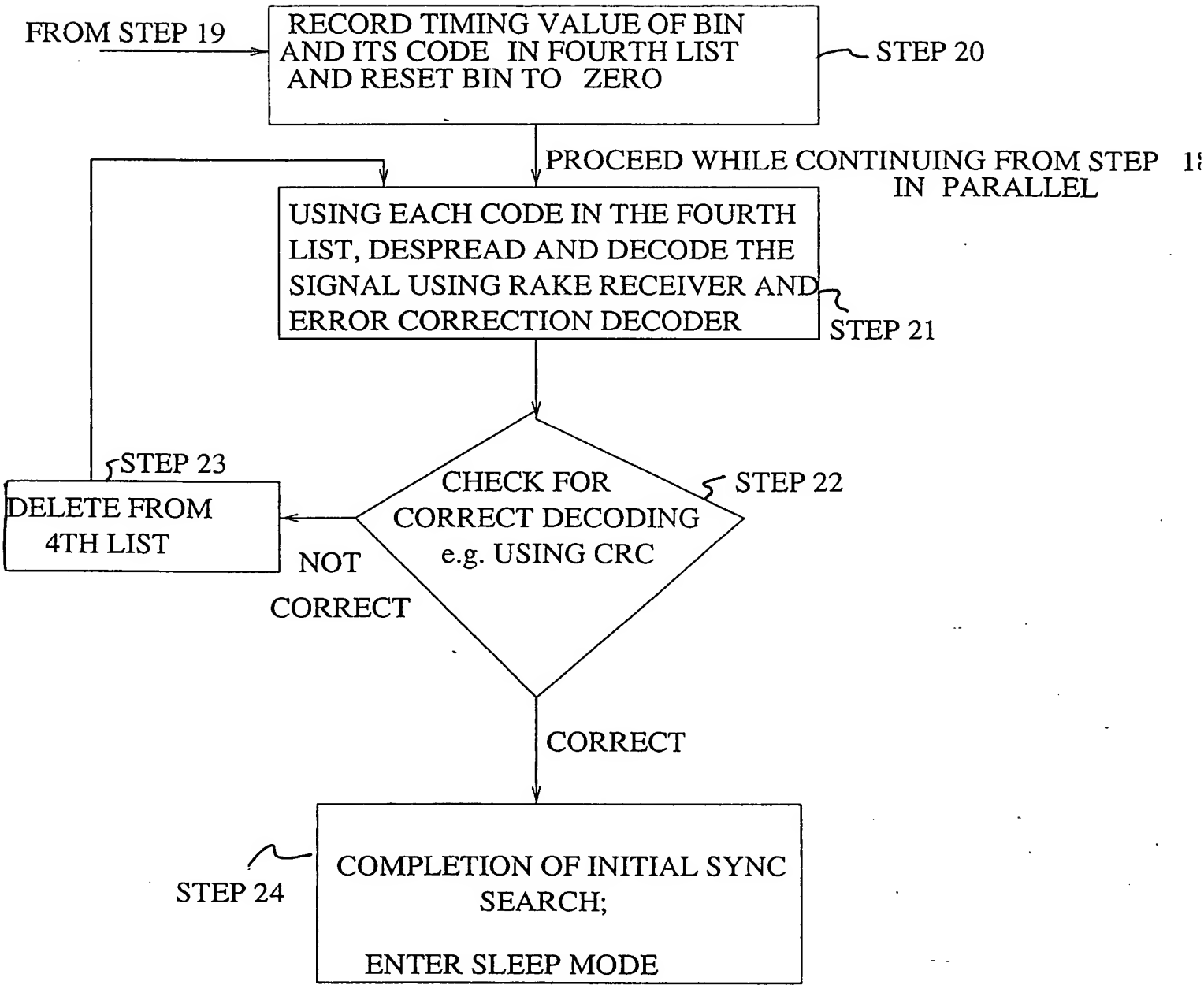
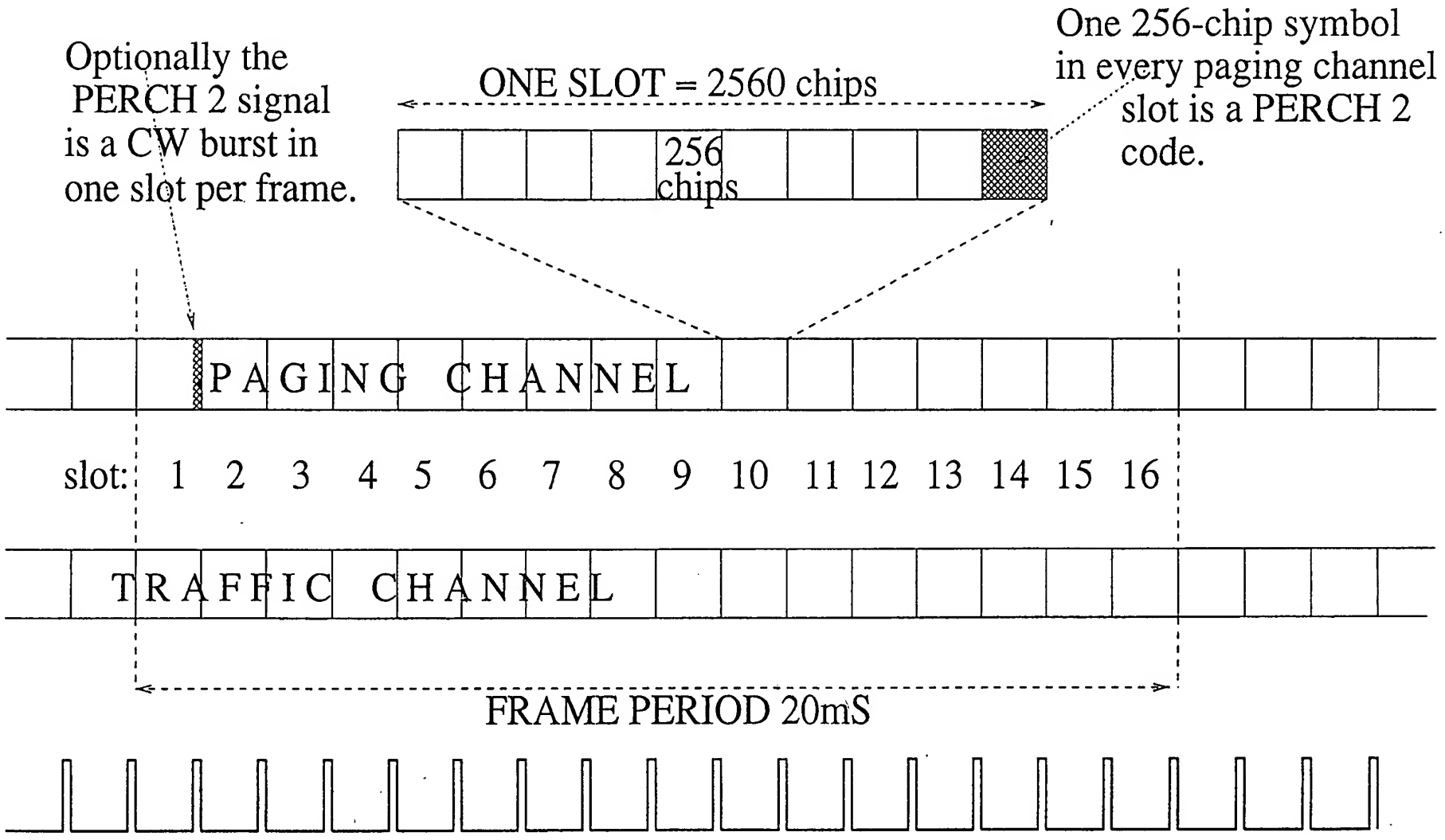

FROM STEP 19
RECORD TIMING VALUE OF BIN AND ITS CODE IN FOURTH LIST AND RESET BIN TO ZERO
STEP 20
PROCEED WHILE CONTINUING FROM STEP 18 IN PARALLEL
USING EACH CODE IN THE FOURTH LIST, DESPREAD AND DECODE THE SIGNAL USING RAKE RECEIVER AND ERROR CORRECTION DECODER
STEP 21
CHECK FOR CORRECT DECODING e.g. USING CRC
STEP 22
STEP 23
DELETE FROM 4TH LIST
NOT CORRECT
CORRECT
STEP 24
COMPLETION OF INITIAL SYNC SEARCH;
ENTER SLEEP MODE

Figure 2(d)




PERiodic CHannel 1 (PERCH 1) = burst of a 256-chip known code in every 0.625mS slot

Figure 3